Genesis HIGH SPEED

User Manual

English

Video Playback Option

Perception

HBM

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For Perception 6.04 or higher

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1 Video Playback Option

1.1 Introduction

The Perception video playback option enables synchronized playback of recorded waveforms and video/audio data streams. This option combines video with data and synchronizes the video frame rate to the data acquisition rate. Once synchronized you can scroll back and forth in the video as well as the data and watch the video and data together as one.

1.1.1 How to install the Video Playback option

The Perception software requires a HASP key. HASP (Hardware Against Software Piracy) is a hardware-based (hardware key) software copy protection system that prevents unauthorized use of software applications. Each HASP key contains a unique ID number used for personalization of the application according to the features and options purchased. The key is also used for storing licensing parameters, applications and customer-specific data.
If you have purchased the Video Playback option as a separate item, you will receive a personalized "key file". Use this file to unlock the additional features.

You can find the serial number of your key in **Help ▸ About Perception**

To update the key information:

1 Choose **Help ▸ Update Key...**
2 In the Open dialog locate the Key File (*.pKey) and click **Open**.
3 If everything is OK you will see the following message:

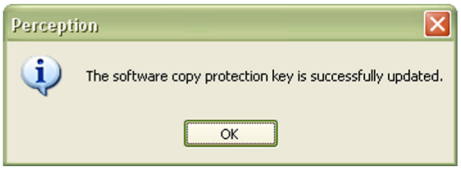


Figure 1.1: Software copy protection dialog

4 Click **OK**.
After the installation you can go to **Help ▸ About Perception ▸ More...** to see all installed options.

You will need to restart the program before the changes take effect. The Video Playback option is now available.

1.2 Adding and deleting video objects

A video object can be easily added to a sheet. Once a sheet is ‘full’ you cannot add a new object. Nor can you replace an object. In such a case you must delete an object first before you can add a new video object.

Objects are placed in the area that you last clicked or in the last available area.

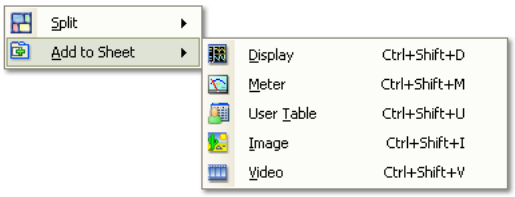


Figure 1.2: Add object menu (empty sheet context)

To add a video object:

To add an object to a sheet do one of the following:

- In the menu bar choose **[dynamic menu] ► Add ► Video**.
- When visible, in the **toolbar** click the **video object** button
- With a right mouse click in the sheet area call the context menu. In the context menu select **Add ► Video**.

To delete a video object:

1 Select the video object that you want to delete.
2 Right-click the video object to access the context menu.
3 In the context menu click **Delete Video [name].**
4 In the confirmation dialog that comes up click **OK.**

1.3 The video object

The video object comprises two main areas: the video area and the control area.

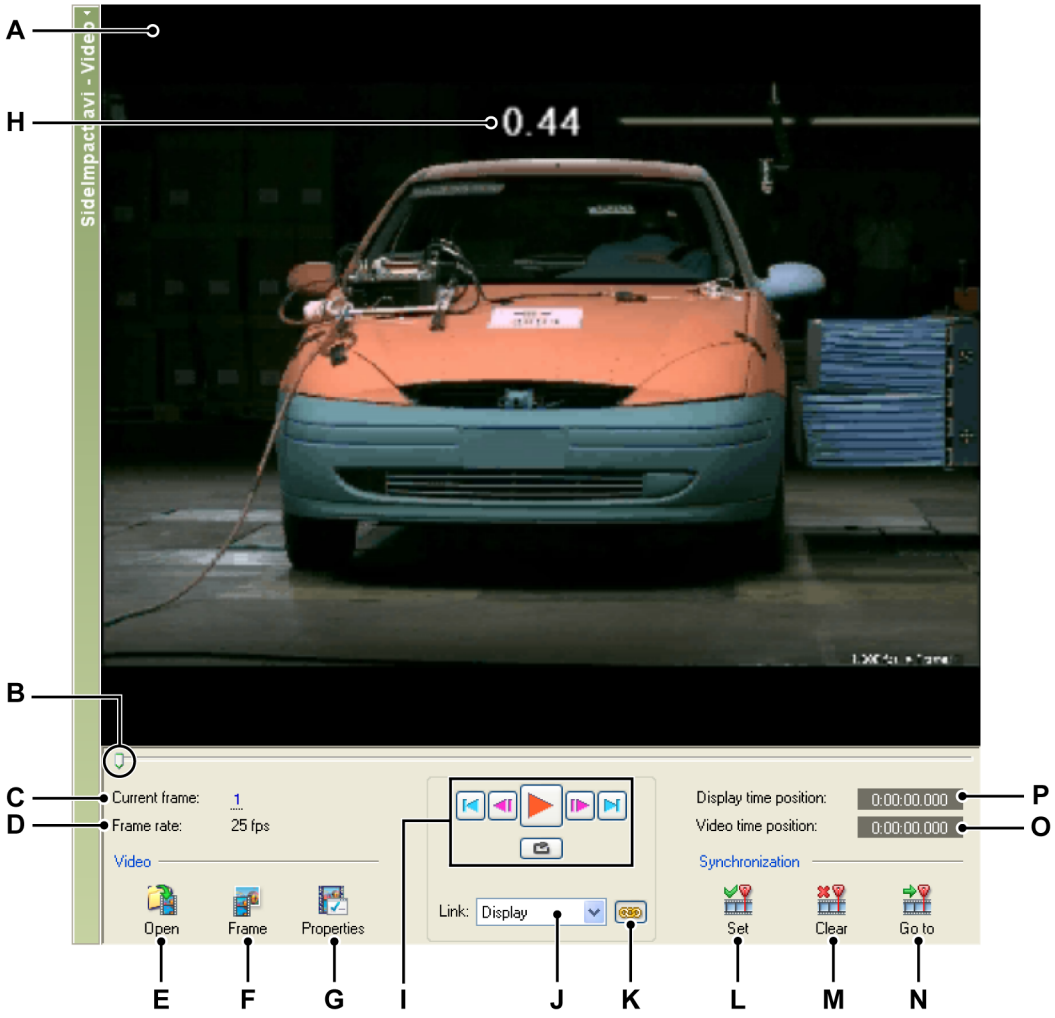


Figure 1.3: The video object

A Video area

B Time line/Jog slider

C Current frame/control

D Selected frame rate

E Open video file

F Copy frame to clipboard

G Video properties

H Overlay

I Playback controls

J Select link source

K Activate link

L Set synchronization point

M Clear synchronization point

N Go to synchronization point

O Video time position

P Display time position

A **Video area** This is the area where the video is displayed. When you resize the video object, or hide the control panel, the video will be resized accordingly.

B **Position indicator/slider** This indicator shows the current position in time of the video. You can also use this indicator as a handle and drag it to jog through the data.

C **Current frame**
There is a number of inbuilt commands which will be active on mouse hover or click within the **Current Frame** field which is underlined with dots.

Figure 1.4: Current frame

The dots - as in other areas of Perception - indicate the presence of more hidden shortcut functions such as “drag” or “scroll” to navigate through frames easily.

D **Frame Rate**
Is the number of frames per second which has been set in **Properties.**

E **Open**
Open a video file.

F **Frame**
Click this button to save the current frame to the Windows clipboard ready to paste into a graphics or Office program.

G Properties

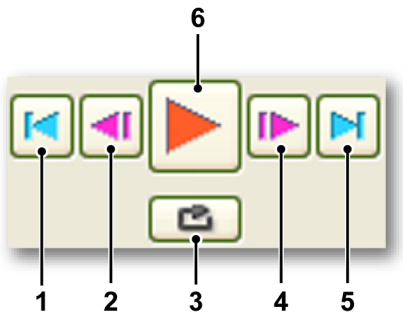
Within the **Properties** dialog you can:

- Change the **Display name** of the video
- Adjust the **Frame rate** of the video accurately or use the given frame rate from the chosen file
- Set the **Playback** speed of the video up to 8x
- Add **Overlay text** of your choice to the video module

H Overlay

You may insert text and/or a data source as an overlay by checking the **Overlay text** box and then clicking on the icon. The data will be added as an overlay on the video so you can easily see the data you need, superimposed over the video image, as you scroll through the video.

I Playback controls A set of controls, many of which resemble the playback controls of a VCR or DVD player.



1 **Go to beginning** Click the left arrow to go to the beginning of the video.
2 **Step frame** Use this button to step one frame backward.
3 **Loop** Click the Loop button to make the video loop continuously until stopped.
4 **Step frame** Use this button to Step one frame forward.
5 **Go to end** Click the right arrow to go to the end of the video.
6 **Play**

J Select Link source

K Link to selected display

After you have selected the desired display from the **link** box you can click the **Link** button which will then **Link** and synchronize to the selected display.

- Button is up: Not linked
- Button is down: linked

The following is an overview of the Set and Link combination of options.

Set Point	Linked	Outcome
No	No	Data and Video are entirely separate and independent
No	Yes	Data and Video are linked from the beginning
Yes	No	Video and data stream have a set point stored
Yes	Yes	Video and data have set points and are linked and synchronized

L Set

Click this button at the data and video position you want to refer to as the synchronization point.

M Clear

If you need to choose a new synchronization point or redo a set link point in the data, make sure you are not linked and then click **Clear** first.

N Go to

When linked, click this button to go to the synchronization point.

O Video Time position

This displays the time in relation to the current video.

P Display Time position

This displays the time in relation to the waveform data.

Properties in detail

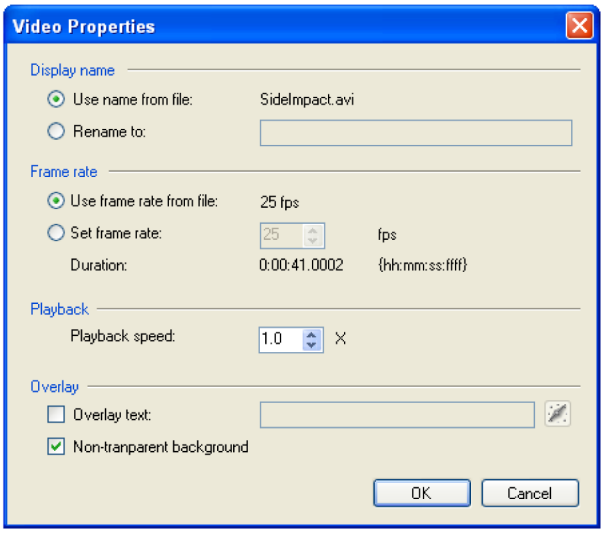


Figure 1.5: Video Properties dialog

The video properties dialog options are as follows:

Display name
The name of the video displayed can be changed with this input field.

Frame rate
The frame rate should be automatically defined to the video frame rate, however you can change this in **Properties** by clicking **Set frame rate** and changing the frame rate in the input field.

Note *When frame rate is changed, so is the Duration since: Duration = Frame rate x seconds.*

Playback
The speed at which the video plays back can be adjusted here up to a speed of 8X the normal speed.

Overlay
You may insert text and/or a data source as an overlay by checking the **Overlay text** box and then clicking on the icon. The data will be added as an overlay on the video so you can easily see the data you need, superimposed over the video image, as you scroll through the video.

Note *1.If the overlay needs to be changed, make sure to completely clear the entry field before choosing a different overlay.*
*2. Checking the check box **Non-transparent background** will make the overlay solid which may cover some of your video image.*

1.4 Setting up video for playback

To set up the video, you need to set up your sources for data and video, and define the Set point and video frame rate.

To Open a video

1 Click the **Open** icon in the Video area and an **Open video file** dialog will appear from which you can select a video. You can also go to the **Dynamic sheet menu** menu and then go to **File** and click **Open Video File**, the **Open video file** dialog will appear from which you can select your video.

Synchronize a Video with Data

Figure 1.6: Synchronization Settings

When a set of data and a video is open you can synchronize them. Synchronizing allows you to set a synchronization point and match a different data rate and video rate so you can scroll through data and video as one

Navigate to a recognizable/trigger point in your video and data and then click **Set** under **Synchronization.** This sets a single synchronization point in your video and data that you can return to when linked by clicking **Go to.**

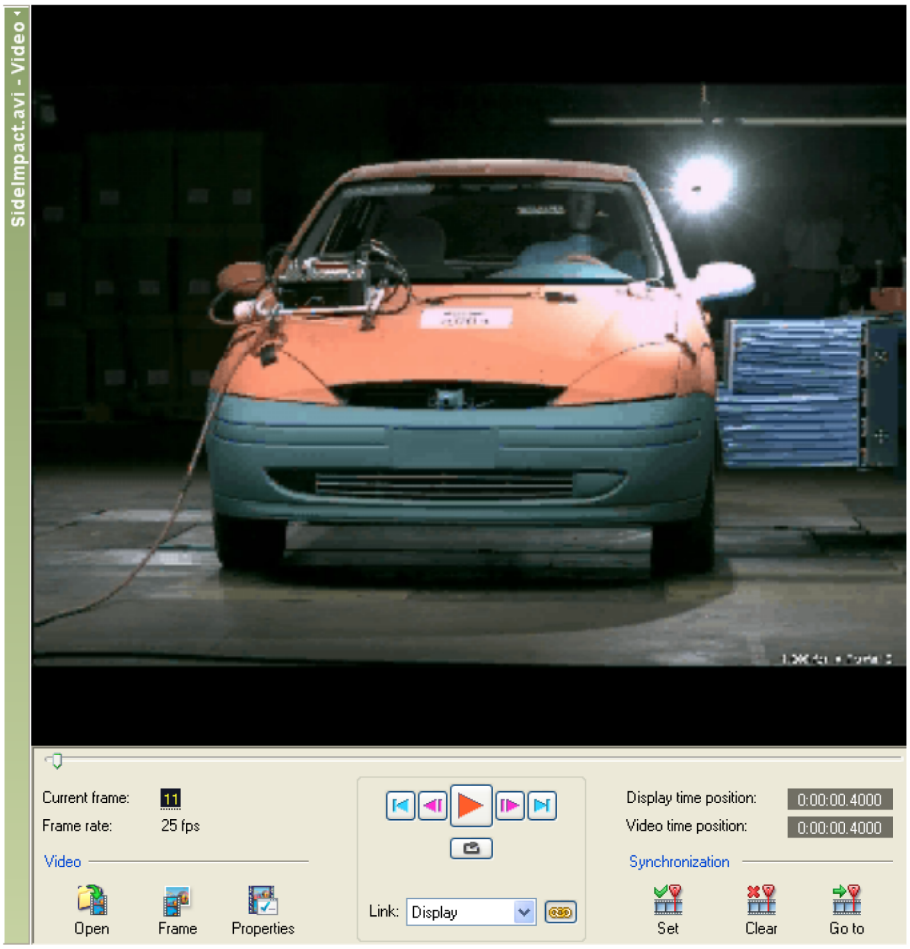


Figure 1.7: A video snapshot of a trigger point

Step by step calibration

1. Make sure you have data available in the display.
2. Click **Open** to load a video.
3. Select a link source from the drop down box.
4. In the data, go to the point of interest.
5. In the video go to the point of interest.
6. Click **Set** to store points of interest to memory.

Note *At this point your data and video are still not linked, enabling you to **navigate** the data with the cursor and the video with the slider independently.*

7. Click **Link** to actualize the synchronization.

8 Optionally set the frame rate and/or replay speed in properties.

9 Verify link points by clicking **Go to.**

The following Figure 1.8 shows two different set points, one in the video, one in the data, and the link button which will link the two points together.

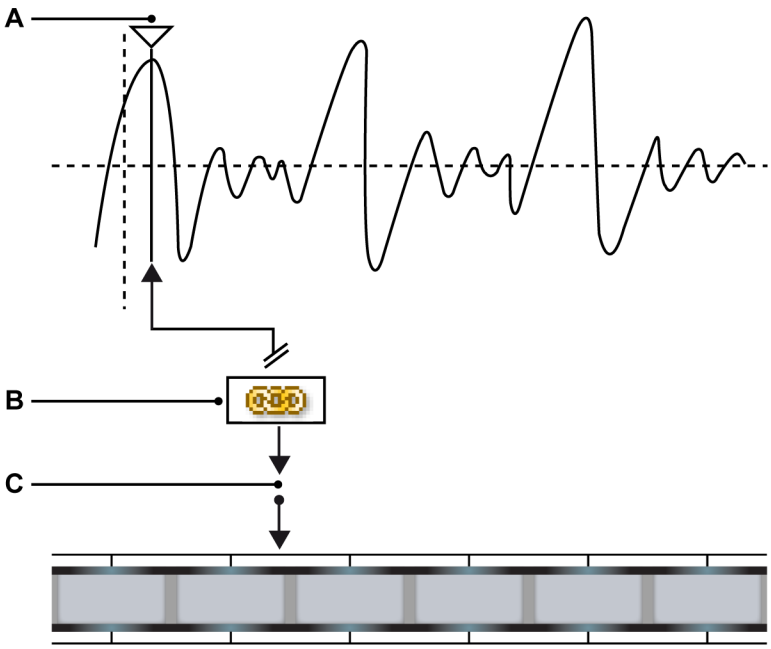


Figure 1.8: Data and video file linking

A Cursor set point

B Link button

C Video set point

In you can see a data stream and a video stream in which the link points have been set and will be linked and synchronized when the link button is pressed.

Note *Once linked, the **Go to** button will work for both data and video, also you cannot change the set point in any way until you unlink the data and video.*

1.5 Synchronized video playback

Once you have a set point and frame rate which have been linked you can start with synchronized playback.

Playing, rewinding or stepping through the video results in corresponding cursor movements in the data, tracking the video frames. In addition: dragging the cursor in the data display results in a corresponding movement of the video.

Video playback controls:

To play the video do any of the following:

- To play the video click the **Play/Pause** button.
- To pause the video click the **Play/Pause** button: the video will stop at the current position.
- To go to the beginning of the video, click the **Go to Start** button.
- To go to the end of the video, click the **Go to End** button.
- To go forward one frame, click the **Frame forward** button.
- To go backward one frame, click the **Frame backward** button.

Alternate Video control

Figure 1.9: Current frame

You can navigate in the normal way using the cursor for data navigation or the video jog slider for video navigation. With the exception that, when linked, these controls are also linked. Within the **current frame** field you can click and drag:

Left to go backwards and right to go forwards in the video.
You can also click once to activate the mouse scroll wheel:

Scroll through the frames quickly and accurately.

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